

Remarks/Arguments:

Applicants' disclosure is directed to a lens containing an aperture. In the exemplary embodiment described in Applicants' specification, the lens has an aperture that has two openings. One opening is for passing an advancing optical beam from a light source headed toward a disk and the other opening is for passing a returning optical beam returning from the disk. The opening for passing the advancing optical beam does not touch the lens' central axis. The opening for passing the returning optical beam occupies an area corresponding to the opening for passing the advancing optical beam, but symmetrically opposite the opening for passing the advancing optical beam on the opposite side of the lens's central axis. At least one of the openings contains a diffraction device.

Claim 9 stands rejected under 35 U.S.C. 102(e) as being anticipated by Komma et al. (U.S. Patent Number 5,815,293) and also by Mukai et al. (U.S. Patent Number 5,995,286). It is respectfully submitted, however, that the claims are patentable over the art of record for the reasons set forth below.

The Komma patent discloses a compound objective lens made up of a hologram lens and an objective lens. The hologram lens transmits a part of the incident light, without any diffraction, to form a beam. It diffracts the remaining part of the incident light to form a beam of first-order diffracted light. The objective lens converges the transmitted light.

The Mukai patent discloses an optical system having a diffractive optical element. The optical element has a diffractive optical surface that allows the optical element to act as a lens as a result of light rays being deflected by the diffractive optical surface.

Applicants' invention, as recited by claim 9, includes a feature which is neither disclosed nor suggested by the art of record, namely:

An aperture-provided lens comprising an aperture having a first opening and a second opening corresponding to the body of a lens, wherein said first opening does not include a central axis of said lens, said second opening includes a region representing said first opening in axis symmetry for said central axis ...

This means that the two openings are located opposite each other with respect to the lens's central axis. In the preferred embodiment disclosed in Applicants' specification, the opening for passing the advancing optical beam does not touch the lens' central axis. The opening for passing the returning optical beam occupies an area corresponding to the opening for passing the advancing optical beam but symmetrically opposite the opening for passing the advancing optical beam on the opposite side of the lens's central axis. This feature is found in the originally filed application at page 15, lines 3-5 and 17-22, page 16, lines 5-8, page 17 line 7 through page 18 line 17 and Fig. 2. No new matter has been added.

The Komma patent discloses a hologram lens. As shown in Fig. 15A, Komma's hologram lens contains four diffraction regions 33A-D. The diffraction regions are placed around the outer perimeter of the hologram lens and are all the same size.

This is different because Applicants' apertured lens has two openings. One of the openings occupies an area corresponding to the other opening but on the opposite side of the central axis. The Komma hologram lens, on the other hand, has four diffraction regions and those four diffraction regions are located along the outer region of the hologram lens.

The Mukai patent discloses a diffractive optical element of an optical system. As shown in Fig. 2, the image side surface of the diffractive optical element is made up of at least a lens having a central axis AX and a diffractive element. The diffractive element is located on one side of the lens' central axis AX.

This is different because Applicants' apertured lens has two openings. One of the openings occupies an area corresponding to the other opening but on the opposite side of the central axis. Mukai's optical element, on the other hand, contains only one diffractive element.

It is because Applicants include the feature of an aperture-provided lens comprising an aperture having a first opening and a second opening corresponding to the body of a lens, wherein said first opening does not include a central axis of said lens, said second opening includes a region representing said first opening in axis symmetry for said central axis, that the following advantages are achieved. This feature permits passage of both an advancing optical beam and a returning optical beam even if the disk is tilted by the advancing optical beam.

Therefore, even if the disk tilts, causing a return beam to fall, most of the returning optical beam passes through without reflecting back.

Accordingly, for the reasons set forth above, claim 1 is patentable over the art of record.

Claims 13-20 include all the features of claim 1 from which they depend. Thus, claims 13-20 are also patentable over the art of record for the reasons set forth above.

Claims 12 and 21 were indicated as being allowable if rewritten in independent form. Claim 12 has been appropriately amended. Claim 21 is already in independent form.

In claim 11, the words "the length" have been changed so as to overcome the indefiniteness rejection.

The Abstract has been amended so that it is now under 150 words, as required.

Appln. No.: 10/003,190
Amendment Dated: October 17, 2006
Reply to Office Action of: July 17, 2006

MTS-2530US1

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,


Lawrence E. Ashery, Reg. No. 34,515
Attorney for Applicants

LEA/ds

Attachments: Abstract

Dated: October 17, 2006

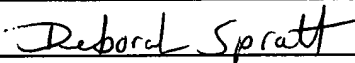
P.O. Box 980
Valley Forge, PA 19482
(610) 407-0700

The Director is hereby authorized to charge or credit Deposit Account No. **18-0350** for any additional fees, or any underpayment or credit for overpayment in connection herewith.

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on:

October 17, 2006

Deborah Spratt



ds/73986